Mathematics

Practice Test Paper 8

(Chapter 6: Triangles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

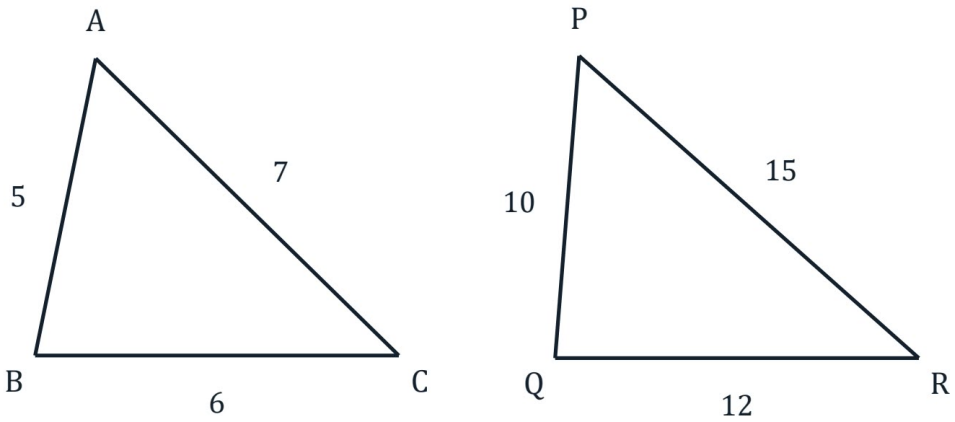
General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Give reasons for geometrical statements where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. Using the side lengths in the diagram, decide whether the triangles are similar.



(A) Yes, by AA
(B) Yes, by SSS
(C) Yes, by SAS
(D) No, the side ratios differ

2. Two similar triangles have side ratio 9 : 4. Their perimeter ratio is:

(A) 81 : 16
(B) 4 : 9
(C) 9 : 4
(D) 3 : 2

3. In $\triangle ABC$, $DE \parallel BC$, AB = 18 cm and AD = 12 cm. If AC = 15 cm, then AE equals:

(A) 10 cm
(B) 5 cm
(C) 12 cm
(D) 22.5 cm

4. Which angle pair is equal when $\triangle ABC \sim \triangle QRP$?

(A) $\angle A = \angle P$
(B) $\angle C = \angle P$
(C) $\angle B = \angle Q$
(D) $\angle C = \angle R$

5. A 3 cm model edge represents an actual edge of 1.2 m. The actual-to-model scale factor is:

(A) 0.4

(B) 4

(C) 40

(D) 400

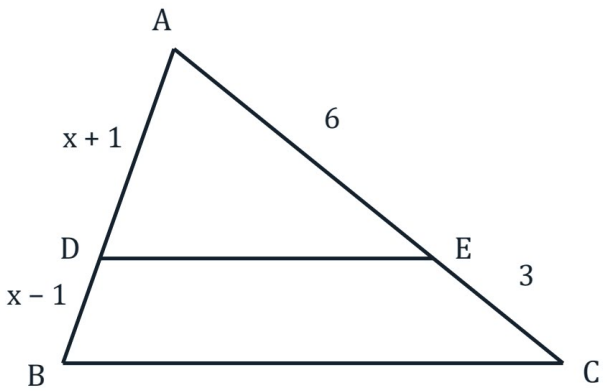
SECTION B

(4 questions × 2 marks = 8 marks)

6. Can triangles with sides 2 cm, 3 cm, 4 cm and 4 cm, 6 cm, 8 cm be similar but not congruent? Explain.

7. D is on AB and E is on AC. If AD : DB = 7 : 3 and AE : EC = 14 : 6, show that DE ∥ BC and find AE : AC.

8. DE ∥ BC in the diagram. Find x, taking all labelled lengths in centimetres.



9. Two triangles have angles (x + 10)°, 50°, 70° and 60°, y°, 70°, respectively. Find x and y, then decide whether they are similar.

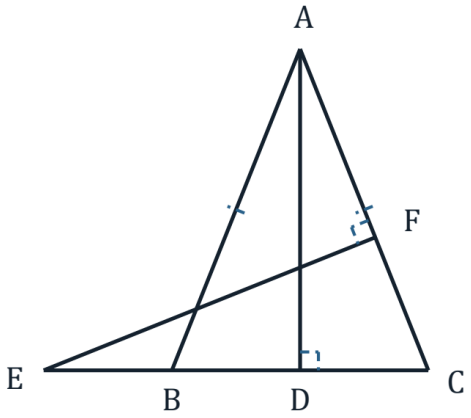
SECTION C

(3 questions × 3 marks = 9 marks)

10. In △ABC, D and E lie on AB and AC. Given AD = x + 3, DB = 4, AE = 2x + 1 and EC = 6, find x so that DE ∥ BC. Also find AC. All lengths are in centimetres.

11. Two similar triangles have perimeters 48 cm and 72 cm. Their corresponding sides differ by 5 cm. Find those two sides, then find the larger triangle's side corresponding to a 14 cm side.

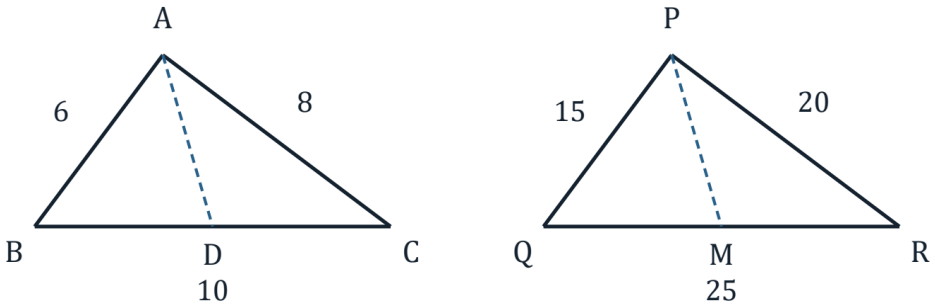
12. ABC is isosceles with AB = AC. E lies on CB produced beyond B. AD ⊥ BC and EF ⊥ AC. Prove that △ABD ~ △ECF.



SECTION D

(Application Based Question - 3 marks)

13. Two triangular display frames ABC and PQR have proportional sides as labelled. AD and PM are medians, and AD = 5 cm.



(i) State the similarity criterion for △ABC and △PQR.

(ii) Find PM.

(iii) Find the perimeter of PQR.